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AMENDMENTS TO THE SPECIFICATION

Please amend paragraphs [0043] – [0046], [0052] and [0084].

[0043] FIG. 4A is a high level flow process 100 illustrating data processing operations performed at a storage cache and a cache server, in accordance with the present invention, for updating a data file at a file server. For purposes of illustrating the process 100, and also the processes described below with reference to FIGs. 4B, 5, 6, and 7, reference is made to the network 10 and operations that the components of the storage caching system 12 would perform in connection with requests for access to a data file from the remote system 16A or 16B where the data file is stored at the file server 36 of the source system 20. For highlighting the features of the process 100, it is assumed that the storage module 56 of the storage cache 30A does not initially contain a cached data file corresponding to a data file that the workstation 22A 46A seeks to access for write purposes.

[0044] Referring to FIGs. 1, 2, 3 and 4A, in step 102, the translator 62 communicates with the file server 38 and generates a copy of the data file that the workstation 22A 46A desires to access. The server manager 60 then transmits a copy of the data file to the storage cache 30A via the gateway 26C, the network 28 and the gateway 26A.

[0045] In step 104, the cache manager 50 receives the transmitted copy of the data file from the gateway 26A and stores the file in the storage 56 as a cached data file. In addition, the translator 52 interacts with the distributed file system of the workstation 22A 46A to provide that the workstation 22A 46A can open, and enter data file modifications to (write) the cached data file. When the user of the workstation is presented with the cached data file, in other words, the user is permitted to open the

cached data file following a request for access for the corresponding data file, the user is not aware of the location in the network 10 from which the file was obtained. The user does not know whether he is working on a local copy of the data file, such as stored at a memory of the local remote system or at the storage cache 30A, or a copy of a data file retrieved from a remote storage location, such as the remotely located data center computer system 20. As the user enters data file modifications at the workstation 22A 46A, the translator 52 monitors the modifications and incorporates these modifications into the cached data file at the storage 56. In other words, only a current version of the cached data file, which includes all modifications to the cached data file previously made by any workstation within the remote system 16A, is stored in the storage 56.

[0046] Steps 106, 108, 110, 112 and 114 set forth file update operations that the storage cache 26A and the cache server 26C automatically perform to update the version of the data file stored at the file server 38, based on the modifications made to the corresponding cached data file stored at the storage cache 26. Based on this automatic updating, the cache server can transmit a real time, updated version of the data file in response to a request for access to the data file received subsequently from an authorized workstation other than the workstation 22A 46A, where the workstation may or may not be associated with a storage cache 30A or another storage cache that is part of the system 12. In the preferred illustrated embodiment of the process 100, the components of the system 12 implement the well known prior art technique of differencing as part of the inventive automatic updating of a data file to minimize potential latencies.

[0052] FIG. 4B is a high level flow process 120 illustrating data processing operations that a storage cache and cache server perform, in accordance with the present invention, for updating a cached data file at a storage cache using the corresponding data file stored at the file server. For purposes of highlighting the features of the process 120, it is assumed that the storage cache 30A has received a request for access to a data file from the workstation 22A 46A, a cached data file corresponding to the data file is stored at the storage module 56 and the workstation 22A or 22B previously accessed the data file for either read or write purposes. By updating the cached data file before it is presented to the workstation 22A in response to an access request, any updates made to the data file since the workstation 22A previously accessed the data file are incorporated into the cached data file. For example, the workstation 22C may have previously written to a cached data file at the storage cache 30B, which corresponds to the data file, and file update data representative of the modifications made to such cached data file may have been used to update the data file at the file server 36, as explained above in connection with the process 100, such that the data file at the file server 36 is different than the corresponding cached data file presently stored at the cache 30A.

[0084] In operation of the system 312, when a workstation desires to access a data file for read or write purposes, and the inventive storage caching system correctly multiplexes an access request to the appropriate cache server, the location from which a copy of the data file is presented to the user is unknown to the user at the workstation. In other words, a user can access and operate on a sharable data file without knowing, being concerned with or ascertaining which data source system physically contains the data file.